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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ODOM, CURTIS B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,384

Applicant(s)

FARJAD-RAD, RAMIN

Examiner

Curtis B. Odom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 10 is/are rejected.
- 7) ☒ Claim(s) 5-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

1. The drawings are objected to because all elements of each drawing figure are suggested to be labeled (see Fig. 1, block 17 and Fig. 3, block 37). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 5-9 are objected to because of the following informalities: In claim 5, line 23, the word "samplers" is suggested to be changed to "sampler". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamada et al. (U. S. Patent No. 6, 151, 282).

Regarding claim 1, Hamada et al. discloses a method for recovering a clock from a data input sequence, comprising:

sampling, according to a sampling clock (Fig. 1, block 23, column 3, lines 40-47), the input sequence such that a first set of samples (Fig. 4, Y(t), samples sent to offset

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correction 310, column 4, line 62-column 5, line 16) corresponds to data values and a second set of samples (Fig. 4, block 330, rising and trailing edge samples detected by block 310, column 5, lines 31-49) corresponds to edges between the data values;

determining (Fig. 4, block 330, column 5, lines 31-49) phase error between data transitions in the input sequence and the sampling clock phase, based on amplitudes of the sampled edges, wherein the phase error is represented by a difference between the amplitude level (rising or falling) of the sampled edges and the sync levels which correspond to the sampling clock phase;

adjusting (Fig. 1, block 50, column 5, lines 50-64) the sampling clock's phase based on the determined phase error.

Regarding claim 2, which inherits the limitations of claim 1, Hamada et al. discloses the phase error is proportional to an amplitude of a sampled edge (column 5, lines 31-49), wherein the phase error is represented by a difference between the amplitude level (rising or falling) of the sampled edges and the sync levels which correspond to the sampling clock phase.

Regarding claim 3, which inherits the limitations of claim 1, Hamada et al. discloses adding/subtracting sampled edge amplitude values to form an error value, according to a direction of each transition about each edge, wherein an amount of phase error is indicated by the error value (Fig. 5, block 330, column 8, line 63-column 9, line 29), wherein the edge samples represent sampled edge amplitude values.

Regarding claim 4, which inherits the limitations of claim 3, Hamada et al. does not disclose ignoring a sampled edge at which no transition occurs. However, Hamada does not disclose performing a phase error detection operation on a sampled edge at

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which no transition occurs. It would have been obvious to one skilled in the art at the time the invention was made that phase error cannot be detected accurately from a sampled edge at which no transition occurs. Thus, claim 4 does not constitute patentability.

Regarding claim 10, the claimed apparatus includes features corresponding to subject matter mentioned in the above rejection of claim 1, which is applicable hereto.

Allowable Subject Matter

5. Claims 5-9 are allowable over prior art because related references do not disclose a phase detector comprising a sampling clock generator which generates an oversampling clock rate compared to the data rate of the input signal; a first sampler which sampled data values; a second sampler with samples edges between the data values; and detecting a phase error based on the two sets of samples, wherein the phase error is used to control the sampling clock generator.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wolaver (U. S. Patent no. 6, 608, 875) discloses generating a phase error based on detected edges in the input signal.


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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 703-305-4097. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
July 1, 2004


STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800